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PROVIDING NEST SITES FOR BIRDS

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As the winter snow fades from the landscape and the earth warms with lengthening days, a young bird's fancy turns to.... nest construction! Spring brings many changes to the backyard wildlife sanctuary. Many birds, especially insect eaters like swallows and warblers, return from their southern wintering grounds to raise their young. A few others, such as juncos and hermit thrushes, depart from western Washington lowlands for higher elevations and are absent from the backyard during the spring and summer. In keeping with these seasonal changes in the avian community and bird behavior, many backyard managers turn their attention to nesting resources for feathered creatures, allowing the observant wildlife manager to witness the full cycle of nature.

Birds that don't use cavities.

Most backyard birds build their nest of grass, twigs, moss, mud, or a combination of these materials, with feathers, hair, or other soft materials often thrown in for good measure. These constructed nests are usually placed in trees or shrubs at various heights. For example, song sparrows often build a nest in the dense tangle of a shrub near the ground, bushtits weave a hanging gourd in taller shrubs or low branches of trees, while band-tailed pigeons place a loosely woven mat of twigs 15 to 40 feet up in the crown of a tree. While there is little that the backyard sanctuary manager can do directly for these birds in providing nests, this nesting behavior once again emphasizes the importance of having an abundance of trees and shrubs so that birds can follow their own instincts in nest building. The management of birds that build nests in vegetation is done indirectly by providing the appropriate habitat of trees and shrubs.

The backyard manager can assist shrub and tree-nesting birds directly in one small way by providing string or yarn for nesting material. A few years ago I had a 20-foot length of string attached to a pole in my backyard. One day I saw a female house finch trying vainly to fly off with the string, only to be yanked back to earth each time the string was pulled tight. All this time the male was fluttering excitedly about her, providing encouragement but no assistance. I quickly went out to cut the string into 1 inch to 4 inch sections, and then watched as the female retrieved these to take to the nest a short distance away. Providing string or yarn can be fun for children, and it will enable them to observe some animal behavior of which we are usually unaware.

It is also a good way to find out where some secretive birds are nesting in your neighborhood.

Cavity-nesting birds.

Birds that are especially affected by urbanization and which can be helped significantly by the actions of the backyard manager are those that nest in cavities. There are two kinds of hole-nesting birds: those that excavate their own cavity (*primary* cavity nester) in an appropriate tree, and those that use an existing cavity (*secondary* cavity nester) made by a previous bird or formed by a broken limb or other natural process.

Their role– Most cavity-nesting birds eat insects. As such, they play an important role in the control of insect pests by preventing insect populations from getting out of hand. Woodpeckers are especially valuable because they consume tree-killing bark beetles in the forests of the Pacific Northwest.

Their decline– Many species of cavity-nesting birds have declined in abundance due to changes in habitat. Modern timber-harvesting practices, the cutting of old growth forests, and the increased demand for firewood have led to the removal of dead or deteriorating trees. These large, old trees, also known as snags, are the most suitable trees for cavity construction by birds. Because tree cavities are often limiting factors in the population growth of cavity-nesting species, the decline of some of these species has paralleled the decline in the number of available snags. The spotted owl, a cavity-nesting species in old-growth forests of the Pacific Northwest, may become extinct in Washington if current trends continue.

This same decline has occurred in our residential neighborhoods, because safety considerations and traditional landscaping practices have dictated the removal of dead or dying trees around houses. The purple martin was a common cavity-nesting species in urban areas of western Washington during the early part of this century. Now it is quite uncommon and seldom seen by backyard wildlife managers. The western bluebird has suffered a similar fate.

Backyard snags– Backyard managers should be cautious about removing old trees from the landscape. These trees should be allowed to remain unless they pose significant safety hazards or detract from the aesthetics of the landscape. Even if large trees must be removed, a stump of 4-10 feet should be retained so that a cavity can be created for hole-nesting species. This is done by excavating a cavity from the top of the stump (using a drill or chisel), covering the top of the newly formed cavity with a board or cedar shingle, and then drilling an entrance hole of the correct diameter through the side of the stump and into the cavity. The visual effects of an exposed stump can be softened with the addition of shrubs, such as vine maple or red-osier dogwood.

Houses for primary cavity nesters– A backyard wildlife manager can supplement the nesting resources for some cavity-nesting birds by providing birdhouses. Most primary cavity nesting birds will not accept existing cavities

such as birdhouses; they must have suitable trees to construct a new cavity each year. In so doing, they provide a source of cavities for the secondary cavity nesters. Sometimes, however, primary cavity nesters can be "fooled" by packing the birdhouse tightly with wood chips. Then these self-respecting birds have the privilege of removing the chips, much in the manner that they would remove wood from a decaying portion of a tree trunk, rather than having to accept the charity of the backyard habitat manager who provided a ready-made birdhouse.

Birdhouses.

In the absence of any existing natural cavities, secondary cavity nesters will often accept birdhouses. It is this group of birds that will most benefit from birdhouses provided by the backyard wildlife manager. Birdhouses may be purchased from local retailers or through specialty mail-order suppliers. They can also be constructed by the sanctuary manager, and birdhouse projects make great activities for scouts and other youth groups.

Material– Wood is the best material to use for birdhouses: it has good insulating properties, it's readily available and easy to work with, and it generally blends well with the landscaped habitat. If you use plywood, be sure it is exterior grade. Avoid metal in making the birdhouse, because it will quickly heat up to lethal temperatures on warm spring or summer days.

Other considerations– Several important considerations should be kept in mind when purchasing or constructing birdhouses:

1. Seams should be made water tight by using exterior grade glue or caulking materials.

2. An eave overhanging the entrance hole can further reduce moisture entering the birdhouse, and a few 1/8" drainage holes in the bottom of the birdhouse will help to drain the moisture that does manage to get inside.

3. Provisions should be made to allow the nest box to be opened for annual cleaning to reduce the possible transmission of parasites and diseases from one year to the next.

4. Ventilation may be necessary, especially if the birdhouse is large or if the entrance hole is located near the bottom. Ventilation can be provided by having a few 1/4" holes near the top of the birdhouse.

5. The size and placement of the entrance hole is critical. If the hole is too small, the desired bird will not be able to enter. If the entrance hole is too large, and this is the more likely situation, then other undesirable occupants, notably starlings, house sparrows, or squirrels, may be able to enter and evict the intended tenant. Use the chart below to determine the correct dimensions for different birds.

6. Natural tree cavities have rough interior surfaces that aid the movement of young birds, especially as they prepare to leave the nest. A birdhouse should have some provision to mimic this rough interior below the entrance hole by having grooves, cleats, hardware cloth, or some similar surface that can be gripped by the bird's feet.

Placement– Placement of the birdhouse may require some experimentation and patience. I once had a chickadee birdhouse up for three years before the birds finally accepted it. Generally speaking, the birdhouse should be somewhat concealed, usually in partial shade as opposed to full sun or deep shade. At the same time, the birds should have an adequate, unobstructed flight path near the entrance hole. These conditions are usually met by placing the birdhouse at the edge between tree or shrub vegetation and an open expanse of meadow, lawn, water, or other low groundcover.

Territoriality– One reason a birdhouse may not be used for some time is that most species are territorial and will actively defend an area around the nest from other individuals of the same species. If, for example, a chickadee is nesting in your neighbor's yard, it will confront other chickadees searching for a nest cavity within several hundred feet of its nest and prevent them from using your perfectly adequate birdhouse.

Territory size varies among species; house sparrows and tree swallows may require just several feet, a robin less than one-half acre, while a chickadee or nuthatch usually needs several acres. Territory boundaries change from year to year, and a well-designed and well-placed birdhouse will probably be used eventually if the desired species is found in your neighborhood.

Territoriality also suggests that the backyard manager should usually hope to have no more than one pair of a particular species nesting in an average-sized residential sanctuary. It may be useful to set out several nest boxes in different locations for a certain species so that the birds can select their most preferred site. However, the remaining boxes should be taken down after one has been selected if house sparrows or starlings are likely to nest in the unused birdhouses.

When to put up a birdhouse– Some birds begin courtship and nesting activities as early as February, but most birds select nest sites during late March, April, and May. This is also the time of year when most of the migratory species return to western Washington neighborhoods. Nest boxes should be available as these birds return and begin looking for places to raise their next brood. Newly constructed birdhouses should be given a chance to "air out" and become naturally weathered, so they could be set in place during the winter months. However, house sparrows and starlings are resident throughout the year and will set up house before most of the migrants return. The backyard manager must be ready to evict these unwanted tenants if they threaten to take over before the desired species appear on the scene. Many birds may raise more than one brood during the nesting season, so the birdhouse should remain on the sanctuary through June or July.

Overcoming problems– Just as there are problems to contend with when feeding backyard wildlife, the sanctuary manager must cope with competing interests among animals during the breeding season as well. The two most difficult problems have already been mentioned: house sparrows and starlings. Both of these non-native species nest in cavities, especially in the nooks and crannies of houses. Starlings readily accept natural cavities in trees, and therefore are to be considered a very serious threat to native primary and secondary cavity nesting birds. House sparrows readily accept birdhouses, and their smaller size allows them to take over a wider variety of birdhouses that the sanctuary manager may have intended for other species.

To minimize problems with house sparrows and starlings, the sanctuary manager can take several actions when providing nest boxes. The most important consideration is the size of the entrance hole. Starlings generally can't squeeze through an opening less than 1.75 inches in diameter; house sparrows require 1.25 inches or greater diameter. Therefore, a properly constructed birdhouse for house wrens and chickadees will keep out both house sparrows and starlings. Similarly, proper dimensions of birdhouses for downy woodpeckers, red-breasted nuthatches, and bewick's wrens will prevent starlings from taking them over.

In addition, neither house sparrows nor starlings like to nest close to the ground, so placing birdhouses for woodpeckers, swallows, chickadees, nuthatches, and wrens within several feet of the ground, especially in a more heavily vegetated area, will further discourage these pests. Starlings reportedly do not accept cavities that have reflective surfaces on the interior walls. Hanging aluminum flashing, aluminum foil, mirrors, or other reflective materials may discourage starlings. The effect of reflective material on other desirable species may, in some cases, be minimal, but in other cases we don't have enough information to make a prediction. This is an excellent area for research by backyard sanctuary managers who can then share their results with others, including the Department of Wildlife.

Starlings and house sparrows that have taken over a birdhouse must be evicted, so constant monitoring by the sanctuary manager is necessary throughout the nesting season. Birdhouses designed for migratory species should be placed out only after the birds have made their spring appearance. Further information on controlling unwanted house sparrows and starlings can be found in the booklet by Don Grussing.

A worthwhile project– Providing birdhouses for secondary cavity nesters is a worthwhile project that could be expanded to other areas in the vicinity of the backyard sanctuary. Urbanization has frequently adversely affected the wildlife resources of greenbelts, ravines and steep hillsides, parks, and other open space areas. A nest box program established by a conscientious backyard sanctuary manager, a group of neighbors, school group, or scout troop would be a very worthwhile project to enhance the wildlife values of a neighborhood. Individuals owning private land may welcome assistance in this endeavor, and officials in charge of public land are often too busy to take on additional worthwhile projects without assistance from the public. The recreational and educational opportunities of such a program are there for individuals with some degree of ecological insight and environmental sensitivity.

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Table 1. Suggested dimensions of birdhouses for cavity-nesting birds.

Species	Floor of Cavity	Depth of Cavity	Entrance above Floor	Diameter of Entrance	Height above Ground
	Inches	Inches	Inches	Inches	Feet
Wood Duck	12 x 12	22	17	3.5-4	10-20 (6' over water)
American Kestrel	8 x 8	12-15	9-12	3	10-30
Barn Owl	10 x 18	15-18	0- 4	6	12-18
Western Screech Owl	8 x 8	12-15	9-12	3	10-30
Northern Flicker	7 x 7	16-18	14-16	2.5	6-30
Hairy Woodpecker	6 x 6	12-15	9-12	1-5/8	12-20
Downy Woodpecker	4 x 4	9	7	1.25	5-15
Violet-green Swallow	5 x 5	6-8	4-6	1.5	4-15
Tree Swallow	5 x 5	6-8	4-6	1.5	4-15
Purple Martin	6 x 6	6	1	2.25	10-20
Chestnut-backed Chickadee	4 x 4	9	7	1.125	4-15
Black-capped Chickadee	4 x 4	9	7	1.125	4-15
Red-breasted Nuthatch	4 x 4	9	7	1.25	5-15
House Wren	4 x 4	6-8	4-6	1-1.25	4-10
Bewick's Wren	4 x 4	6-8	4-6	1.25	5-10
Western Bluebird	5 x 5	8	6	1.5	5-10